

NATURAL NUMBERS, DIVISIBILITY, POWERS AND ROOTS

Exercise 1: (1 point) I have a flock with one hundred and seventy three sheep and I want to form the biggest possible square with them to shear them.

- a) How many sheep can I place on each side?
- b) How many sheep are left?
- c) Can I form another square with the sheep that have wool?
- d) Is there any sheep left for a stew?

Exercise 2: (2.25 points) Work out the value of the following expressions:

- a) $3^5 \cdot 3^7 : 3 =$
- b) $(x^6 : x^4) \cdot (x^3 : x) =$
- c) $(y^2)^5 : (y \cdot y^4)^2 =$
- d) $(30^7 : 5^7) : (3^4 \cdot 2^4) =$
- e) $\frac{3^5 \cdot 5^2 \cdot 3 \cdot 5^7}{3^2 \cdot 5^6 \cdot 3^3} =$

Exercise 3: (0.75 points) ¿De cuántas formas podemos repartir sesenta camisetas en montones iguales? Indícalas.

Exercise 4: (1.5 points) Work out:

- a) $\text{lcm}(52, 40) =$
- b) $\text{hcf}(120, 144) =$
- c) $\text{hcf}(30, 49) =$

Exercise 5: (1 point) Tours for Cazorla leave every thirty minutes and tours for Castril every forty five minutes. When do the tours leave at the same time?

Exercise 6: (1.5 points) Work out the value of the following expressions:

- a) $2 + 3\sqrt{49} - (\sqrt{36} : 2)^2 + 1 + 2 \cdot (8 - 5)^2 - 1^{29} =$
- b) $\sqrt{81} + 2 \cdot (\sqrt{12 + 4} - \sqrt{9}) + 6 \cdot 2^2 - \sqrt{100} : \sqrt{25} =$

Exercise 7: (0.75 points) Determine if the numbers 45782, 72510 y 122133 are divisible by 2, 3, 5, 10 and 11

Exercise 8: (0.5 points) Round the following numbers using scientific notation:

- a) 45 781 300 000 to three significant figures
- b) 984 560 000 000 000 to two significant figures

Exercise 9: (0.75 points) Calcula el valor de x para que el número $72x5$ sea divisible por

- a) 3
- b) 2
- c) 11